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PRELIMINARY DESCRIPTION OF TWO  
LOWER MIOCENE CARNIVORES

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A number of carnivores in the collections of Field Museum are being studied at this time. In order to fix certain doubtful relationships and to clear the way for morphological studies now in progress, it is necessary to name two new genera.

Family Mustelidae

**Promartes** gen. nov.

*Genotype*.—*Promartes olcottii* sp. nov.

*Horizon*.—Lower Miocene.

*Generic characters*.—Small carnivorous mammals similar in size to *Martes retusa* and *M. americana*. Skull, length in known species, 73 to 95 mm. Dentition,  $\frac{3}{3}$ ,  $\frac{1}{1}$ ,  $\frac{3-4}{3-4}$ ,  $\frac{2}{2}$ . Premolar  $\frac{1}{1}$  and  $P_1$  vestigial, sometimes absent; accessory cusps present on  $P_3$  and  $P_4$ ; talonid of lower sectorial basin-shaped with lateral margin crested;  $M^2$  much reduced. Auditory bullae large, laterally compressed, and placed obliquely to the cranial axis; paroccipital process closely applied. Humerus with simple deltoid crest; supinator ridge prominently developed; inner condyle strongly developed and extending below the trochlea; scapula having an axillary process.

**Promartes olcottii** sp. nov.

*Holotype*.—F.M. No. P15178. Paratype F.M. No. P14055.

*Horizon and locality*.—Harrison Beds, lower Miocene. Niobrara River, Sioux County, Nebraska.

*Additional characters*.—Dentition,  $\frac{3}{3}$ ,  $\frac{1}{1}$ ,  $\frac{4-3}{4-3}$ ,  $\frac{2}{2}$ . Skull, length in holotype 82 mm., in paratype 86 mm.; cranium expanded, parietal ridges in the holotype indistinct and do not join at the median line; in the paratype they join to form a low crest. Premolar  $\frac{1}{1}$  reduced but

SEP 24 1942

not displaced,  $P^1$  vestigial or absent;  $M^2$  reduced,  $M_{\overline{2}}$  small but functional. Mandible with ramus strong, convex on inferior margin; masseteric fossa deep, and bounded anteriorly by a prominent crest; coronoid process broad but does not overhang the condyle. A process is developed from the axillary border of the scapula which, in the holotype, extends half its length and forms a secondary spine. The inner condyle of the humerus extends below the trochlea but is not excavated on its posterior surface by a condylar fossa.

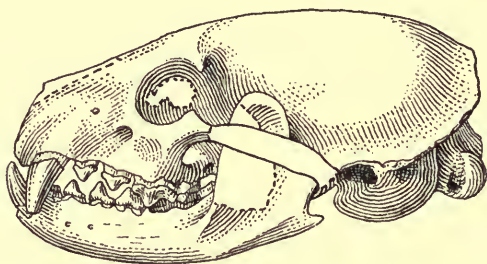


FIG. 18. Skull of paratype, *Promartes olcottii* gen. et sp. nov., Harrison Beds, Nebraska.  $\times \frac{3}{4}$ .

The holotype of this species consists of a broken skull in which most of the palate, the basicranial region with one bulla, and the left maxillary with entire molar-premolar dentition are preserved, together with an area of the frontal and parietal region. Both mandibles are preserved entire with full dentition excepting some incisors. Included also is a large part of the skeleton, of which a full description will be given in another paper.

The paratype (F.M. No. P14055) consists of a skull and mandible anatomically complete, collected from the Harrison Beds of Raw Hide Creek, Wyoming. It is figured from side view as the most perfectly preserved skull and mandibles of the species available for description.

#### SPECIES REFERRED TO THIS GENUS

*Oligobunis lepidus* Matthew, Bull. Amer. Mus. Nat. Hist., 23, 1907, p. 194.

*Oligobunis vantasselensis* Loomis, Amer. Jour. Sci., 1932, p. 321.

*Oligobunis gemmosae* Loomis, Amer. Jour. Sci., 1932, p. 317.

The above enumerated species, in varying degree, come under the characterization of the genus *Promartes*. Their relationships will be discussed in a paper now in preparation.



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Family Procyonidae

**Zodiolestes** gen. nov.

*Genotype*.—*Z. daimonelixensis*.

*Horizon*.—Lower Miocene.

*Generic characters*.—Small carnivores of a size and proportion similar to that of *Cryptoprocta*. Dentition mustelid-like; formula  $\frac{3}{3}, \frac{1}{1}, \frac{4}{4}, \frac{2}{2}$ ; all teeth functional; parametacone and metaconid of carnassials well developed. Muzzle tapering, cranium moderately inflated; sagittal and lambdoidal crests prominent; alisphenoid canal

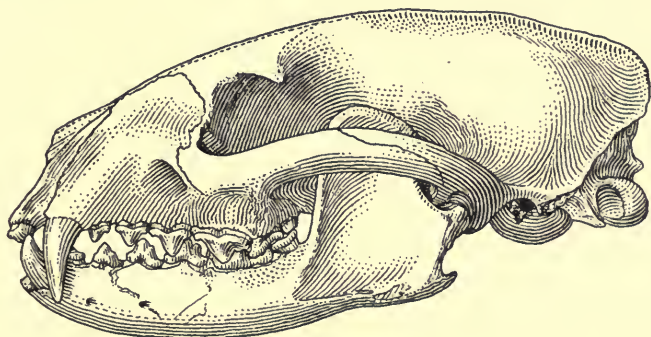


FIG. 19. Skull of holotype, *Zodiolestes daimonelixensis* gen. et sp. nov., Harrison Beds, Nebraska.  $\times \frac{3}{4}$ .

absent, basicranium broad and short. Tympanic region procyonid-like, agreeing with living genera in structure and especially in the presence of a fossa in superficies meatus of squamosal and in flooring of medial part of fossa muscularis major by periotic; differing in that tympanic does not form a bony external auditory meatus; paroccipital process closest to that of *Bassariscus* but stouter and more posteriorly directed.

***Zodiolestes daimonelixensis*** sp. nov.

*Holotype*.—F.M. No. P12032.

*Horizon and locality*.—Harrison Beds, lower Miocene. Niobrara River, Sioux County, Nebraska.

This species is based upon an articulated skeleton, almost entire, collected from the *Daimonelix* zone in 1906. It was found within the spiral of one of these peculiar structures as reported at the time (Science, n.s., 29, 1909, p. 196). On the basis of dental formula and of dental structure, the specimen was identified as a

mustelid and was provisionally referred to the genus *Oligobunis*. However, the shortness of the basicranial region gave rise to misgivings as to the accuracy of this determination. In neither the holotype of *O. crassivultus* nor that of *O. lepidus* was the basicranial region preserved. A recent study of a number of lower Miocene carnivores has led to the conclusion that dental characters alone can not be relied upon as a basis of classification among these carnivores. A careful study of the auditory region in these forms has led to the conclusion that there are decided procyonid characters in the specimen under consideration. Therefore it has become necessary to propose the new genus and species for the "corkscrew carnivore" as defined above. Another paper which is expected to follow this will give more detailed descriptions.

## MEASUREMENTS

(In millimeters)

|                                                                            |     |
|----------------------------------------------------------------------------|-----|
| Skull, length, incisors to condyles.....                                   | 115 |
| Skull, breadth over arches.....                                            | 78  |
| Dental series, length.....                                                 | 52  |
| Temporal region, M <sup>2</sup> to posterior margin of glenoid cavity..... | 31  |
| Cranial region, posterior margin of glenoid cavity to condyle.....         | 32  |
| Cranial region, breadth over mastoid processes.....                        | 49  |

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